



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of

Atty. Dkt. No.: 5430

Maocheng LI et al.

Appln. No.: 09/774,192

Filed: Jan. 29, 2001

Group Art Unit: 1763

Conf. No.: 7295

Examiner: A. Crowell

Title: ICP WINDOW HEATER INTEGRATED
WITH FARADAY SHIELD FOR FLOATING
ELECTRODE BETWEEN SOURCE POWER
COIL AND ICP WINDOW

**APPELLANT'S REPLY BRIEF
UNDER 37 C.F.R. § 1.193**

M/S Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In reply to the Examiner's Answer mailed May 20, 2004,
Appellant submits arguments responsive to reasoning raised for
the first time in the Examiner's Answer.

I. ARGUMENTS

A. Claim Construction

The Examiner has construed independent claim 28 such that the limitation "outside the chamber" is construed to mean outside the chamber or within the chamber wall. See Examiner's Answer at page 6, lines 12-16. There are two problems with this claim construction.

First, construing "outside the chamber" to include "within

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the chamber wall" goes beyond the plain meaning of the words and there is nothing in the record to indicate that Appellant intended any meaning other than the plain meaning. The words of the claim must be given their plain meaning unless a clear definition has been provided in the specification. *In re Marosi*, 710 F.2d 799, 218 U.S.P.Q. 289 (Fed. Cir. 1983). The specification does not contain a definition stating that the term "outside the chamber" includes within its meaning "within the chamber wall." Appellant again affirms that "within the chamber wall" is not the intended meaning of the term "outside the chamber."

Second, the claim construction urged by the Examiner is not supported by the disclosure as filed. Claims are to be given their broadest reasonable interpretation consistent with the specification. *In re Hyatt*, 211 F.3d 1367, 1372, 54 U.S.P.Q.2d 1664, 1667 (Fed. Cir. 2000). Neither the specification nor the drawings of this application describe or illustrate a structure wherein a shield or a heater are embedded within a chamber wall.

Shield and heater structures are described in the specification as being near the chamber wall on its outside. Thus, to interpret the term "outside the chamber" as including the meaning "within the chamber wall" is inconsistent with the specification.

In view of the above reasoning, Appellant respectfully

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requests that the Examiner's claim construction not be adopted in considering this appeal.

B. Insufficient Evidence to Support New Position

The Examiner proffers a contingent position that, in the event that it is determined that the Yoshida reference does not teach the Faraday shield being located between the heater and the chamber wall, it would still be an obvious design modification since the mere arrangement of parts which does not modify the operation of a device is *prima facie* obvious.

See Examiner's Answer at page 7, lines 5-8. There are two problems with this reasoning.

First, the Examiner identifies no motivation in the record as to why a person of ordinary skill in the art would have modified the parts arrangement of Yoshida to be that of the claimed invention. In an obviousness determination, the factual question of motivation to modify prior art is material to patentability, and cannot be resolved on subjective belief and unknown authority. *In re Lee*, 1277 F.3d 1338, 1345, 61 U.S.P.Q.2d 1430, 1433-1434 (Fed. Cir. 2002).

Second, the claimed arrangement does operate in a way that improves over that of the Yoshida arrangement. If the heater in the Yoshida system fails, then vacuum must be broken to replace the entire chamber wall. In contrast, if the heater of the

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claimed invention fails, then the heater is replaceable without breaking vacuum on the chamber.

This difference is an important operational advantage of the claimed invention in terms of minimizing maintenance hassles and production down time. In the context of semiconductor fabrication, breaking vacuum on a vacuum chamber production tool is a big deal. That is because opening up the chamber exposes the internal surfaces and structures of the chamber to ambient atmosphere. Once this happens, skilled technicians must follow a process of cleaning, baking, and seasoning in order to ensure that all newly introduced particles have been removed and that the chamber is in "ready for processing" mode. This can take up to 48 hours and has a very high cost of money and labor.

Cleaning requires solvent cleaning of all exposed part and then reassembly. After the cleaning, the skilled technicians must operate the chamber for several cycles to further clean any remaining particles (simple water vapor can be some of the most tenacious contamination to remove). The chamber is cycled with dummy wafers so as to "season" the chamber and avoid what is called "first wafer effect." The first wafer effect is the phenomenon wherein the process behaves differently after the chamber has just been cleaned compared with how it behaves after a few wafers have been processed. This is due to accumulation of

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polymers on the chamber walls. So, to avoid this transient effect and get to a stable process conditions, the chamber is "seasoned" by cycling it with dummy wafers. Of course, all of this is costly, laborious, and time consuming, but the biggest cost is the opportunity cost of not having the vacuum chamber production tool in production for two days while this is going on.

For these additional reasons, Appellant respectfully requests that the obviousness rejection be reversed.

C. The Yin Reference

The Examiner contends that the teachings of the Yin reference are "irrelevant to the instant issue" of obviousness. See Examiner's Answer at page 7, lines 13-16.

However, the law is clear that prior art that teaches away from the urged modifications is relevant. Such teaching away in the prior art cannot be ignored and must be taken into account in an obviousness analysis. That is because the prior art must be considered as a whole. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 U.S.P.Q. 303 (Fed. Cir. 1983), cert. denied 469 U.S. 851 (1984). The substantial evidence standard is the appropriate standard required of the PTO in its agency decision making. *In re Zurko*, 258 F.3d 1379, 59 U.S.P.Q.2d 1693

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(Fed. Cir. 2001). Considering only certain selected evidence while ignoring inconsistent evidence of record would not meet the substantial evidence standard required of the PTO.

For these additional reasons, Appellant respectfully submits that it is appropriate to consider the teachings of the Yin in evaluating the obviousness rejection.

D. The Fuji et al. Citation

The Examiner makes reference to "Fuji et al" in a context that appears to imply that it is a relevant reference. See Examiner's Answer at page 7, last line.

Appellant respectfully submits that there does not appear to be a Fuji et al. reference of record in this application. The citation to Fuji et al. appears to be a typographical error. However, in the event that the Examiner meant by citing to Fuji et al. to cite a new reference in the Examiner's Answer, Appellant would respectfully submit that such a new grounds of rejection would not be appropriate under 37 C.F.R. § 1.193.

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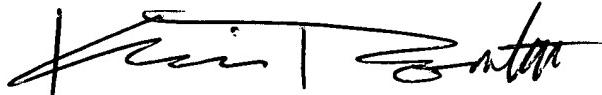
II. CONCLUSION

For the above reasons, in addition to the arguments set forth in Appellant's Brief on Appeal, Appellant respectfully submits that the obviousness rejection should be reversed.

The present Brief on Appeal is being filed in triplicate.

Respectfully submitted,

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